

CLAIMS:

1. A method of exchanging roll sets (5, 6) in rolling mill stands (2, 3, 4) of a rolling mill train (1) with several rolling mill stands (2, 3, 4) which include respective backup and working roll sets (5, 6), by displacing a working roll set (6) or a backup roll set (5), which are supported on top of each other, in an axial direction, on an operator's side (1b), into a roll workshop (20) and subsequently displacing back and mounting new roll sets (5, 6),

characterized in that

on the operator's side, individual worn-out working roll sets (6) are brought on a number of separate transversely displaceable carriages (9, 10, 11) that corresponds to a number of the rolling mill stands (2, 3, 4), one after another along a single connection track (14a) by a single locomotive (21) into the roll workshop (21) and, therefrom, new working roll sets (6a) are displaced back and are set at exchange distances (2a, 3a, 4a) on respective transversely displaceable carriages (9, 10, 11) between the rolling mill stands (2, 3, 4), and in that after unblocking of the operator's side (1b) by the transversely displaceable carriages (9, 10, 11), after dismantling respective worn-out working roll sets (6), the worn-out backup roll sets (5) are withdrawn and are

brought with a crane in the roll workshop (20), are serviced, are transported back, and are again mounted in corresponding rolling mill strands (2, 3, 4).

2. A method according to claim 1,

characterized in that

in a start position (1a), in front of each rolling mill stand (2, 3, 4), simultaneously, the transversely displaceable carriage (9, 10, 11) is adjusted to the exchange distance (2a, 3a, 4a), worn-out working roll sets (6) are removed, after transverse displacement, new working roll stands (6a) are placed on another carriage halves, and the worn-out working roll sets (6) are displaced, respectively, from their transversely displaceable carriages (9; 10; 11) over slides on the chock in the roll workshop (20), are dismantled, and a new working roll set (6a) is brought again in the start position (1a).

3. A method according to claim 1 or 2,

characterized in that

in the start position (1a), a respective worn-out set (6) is pulled onto associated carriage half, and a new working rolls et (6a), which is delivered from the roll workshop (20), is pushed onto the other carriage half at a distance

from the axis that corresponds to the exchange distance (2a, 3a, 4a) in front of the rolling mill stand (2, 3, 4).

4. A method according to one of claims 1 through 3,

characterized in that

the transversely displaceable carriages (9; 10; 11) are displaced one after another in a rolling direction from their predetermined positions for rolling mill stand dismantling or installation.

5. A method according to one of claims 1 through 3,

characterized in that

with respective intermediate plates (7a) pivotal in a horizontal plane, precisely reproducible distances and exchange positions with respect to adjacent rolling mill stands (2; 3; 4) are established between the transversely displaceable carriages (9; 10; 11), and that established exchange distances (2a, 3a, 4a) are compensated by pivoting or vertical displacement of the intermediate plates (7a) and/or closing plates (18).

6. A method according to one of claims 1 through 5,

characterized in that

for exchanging of backup roll sets (5), by displacing of the transversely displaceable carriages (9; 10; 11) away, in front of respective rolling mill stands (2; 3; 4), respective gaps (12) are provided, and worn-out backup roll sets (5) are removed with a crane, and new, refurbished backup roll sets (5) are installed with the crane.

7. A method according to claim 6,

characterized in that

the gap (12) in front of the rolling mill stand (2; 3; 4) is closed again by pivoting the intermediate plates, and the transversely displaceable carriage (9; 10; 11) is again displaced in the exchange space (2a, 3a, 4a).

8. A method according to one of claims 1 through ,

characterized in that

empty transversely displaceable carriages (9; 10; 11), with the intermediate plates (7a) being pivoted away, are displaced in respective parking positions at one and/or another end of the rolling mill train (1) and are parked.

9. An installation for exchanging roll sets (5, 6) in rolling mill stands (2, 3, 4) of a rolling mill train (1) with several rolling mill stands (2; 3; 4) having respective backup and working roll sets (5, 6), with a drive for

transverse dismantling or transverse installation of roll sets (5, 6), wherein parallel to a rolling direction (13), rails (14) for transversely displaceable carriages (9; 10; 11) in a foundation (15) and a connection track (14a) toward a roll workshop (20) are provided, and the transporting carriages are connected with a drive,

characterized in that

the transversely displaceable carriages (9, 10, 11) are displaceable along continuous rails (14) placed in the foundation (15) parallel to the rolling direction (13) at fixed spacings (16) between the rolling mill stands (2; 3; 4) which are controlled with pivotal intermediate plates (7a), and that only one connection track (14a) runs, transverse to the rails (14) in the roll workshop (20) and on which only one locomotive (21), to which a respective working roll set (6, 6a) is attachable or detachable, runs.

10. An installation according to claim 9,

characterized in that

the intermediate plates (71) are, respectively, height-adjustable or pivoted away in a vertical plane or are adjustable in a horizontal plane.

11. An installation according to claim 9 or 10,

characterized in that

the intermediate plates (7a) are, respectively, pivotally mounted on a transversely displaceable carriage (9; 10; 11) and are pivotal by a piston-cylinder drive (17) pivotally supported on the transversely displaceable carriage (9; 10; 11).

12. An installation according to one of claims 9 through 11,

characterized in that

the transversely displaceable carriages (9; 10; 11), the intermediate plates (7a) pivotal in the horizontal plane, and closing plates (18), which are provided at the ends of a foundation pit, fixed against rotation but are pivotal in the horizontal plane and are vertically adjustable, form a continuous accessible working surface (19).

13. An installation according to one of claims 9 through 12,

characterized in that

at the ends of the rails (14) that run parallel to the rolling direction (13), respective fixedly and pivotally supported closing plates (18) are arranged and which provide for movement of the transversely displaceable carriages (9, 10,

11), together with the pivotal intermediate plates (7a), by at least half of the transversely displaceable carriage (9, 10, 11).